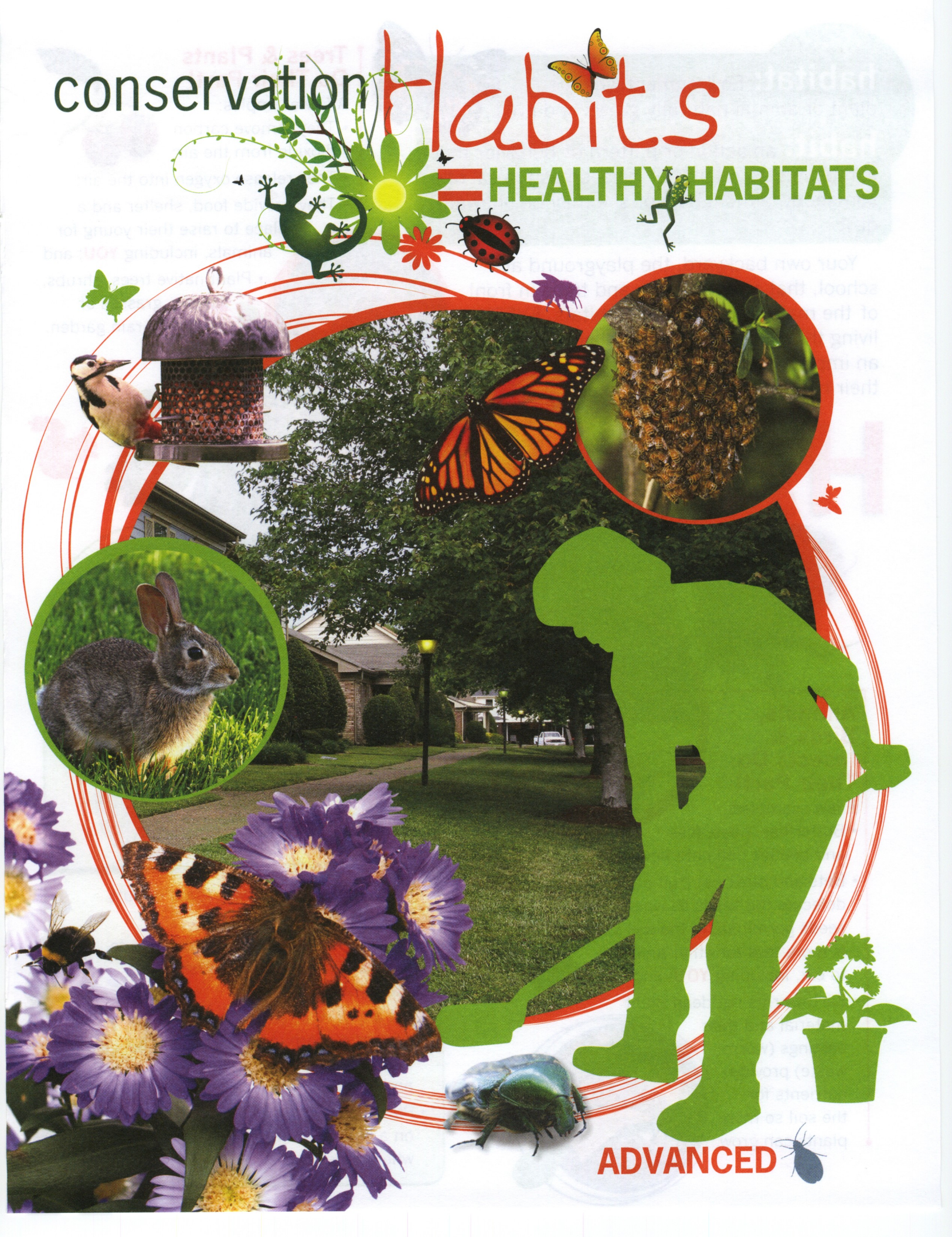


conservation habits = HEALTHY HABITATS



ADVANCED

habitat: Environment where a plant or animal naturally grows and lives.

habit: an action or pattern of behavior that is repeated so often that it becomes typical of somebody, although he or she may be unaware of it.

Your own backyard, the playground at school, that strip of grass and trees in front of the mall... these are all habitats. EVERY living thing, including **YOU**, plays an important part in keeping their habitat healthy.

HABITats

Trees & Plants Do Their Part!

A few examples:

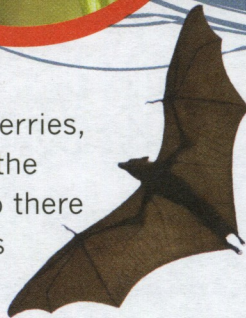
- They remove carbon dioxide from the air;
- They release oxygen into the air;
- They provide food, shelter and a place to raise their young for animals, including **YOU**; and
- Plant native trees, shrubs, flowers, grasses or establish a rain garden.



Animals, Birds & Insects Do Their Part!

A few examples:

- Butterflies, bees, flies and beetles pollinate flowers;
- Bats and birds eat fruit and berries, defecate the seeds as waste, the seeds germinate in the soil so there is more fruit for other animals to eat, including **YOU**; and
- Earthworms eat dead plant material and their castings (worm waste) provide nutrients for the soil so more plants can grow.

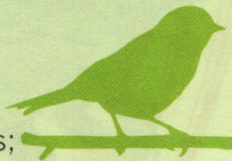


Do You Do Your Part?

What habits do you have that affect your **habitats**? There are many things you can do to help keep your habitat healthy.

A few examples:

- Add a birdbath or other water source for animals;
- Plant flowers, trees with fruits or nuts and shrubs with berries;
- Recycle so that habitats don't have to be destroyed and natural resources are preserved;
- Let a corner or strip of your yard or playground grow naturally to provide shelter and food for wildlife; and
- Plant grass or groundcover on a bare patch of soil where erosion has occurred.



Change Your Habits

On line #1 start with **CHANGE YOUR HABITS**, with no spaces between the words. Then follow the directions very carefully to discover why you need to change your habits!

1. **Use** the phrase **CHANGE YOUR HABITS** without any spaces between the words.

CHANGEYOURHABITS

2. **Delete** the last consonant.

3. **Replace** the first consonant with the last vowel. Do not remove the last vowel.

4. **Delete** each letter found in GANGLION that is not found in POLLINATORS.

5. **Move** the second vowel to the end of the row.

6. **Add** the word PROTECT between the first and second consonants.

7. **Delete** each letter found in INSECT that is not found in BUTTERFLIES.

8. **Move** the 8th and 9th letters to the end of the row.

9. **Replace** the first consonant in the row with the first consonant in the word MIGRATE.

10. **Delete** the last vowel.

11. **Replace** the letter that is 1/3 of the way into the row with the letter V.

12. **Put** spaces in to form three words and you will see why you need to change your habits!

VERTICAL SPACE

Canopy: the tallest tree branches

HORIZONTAL SPACE

Understory Vegetation: small trees, shrubs and vines

Floor: ground cover made up of low growing plants

Basement: soil—there are more organisms in one shovel full of soil than all of the people living on planet Earth



You have already learned that you can make a **home** for **wildlife** just about anywhere; a small space in your backyard, a corner of the playground at school, that strip of grass between the sidewalk and the street. Just don't make it under your bed...your parents would NOT be happy! When you're planning your **wildlife habitat** remember that you have both a **horizontal** space (the size of your spot) and a **vertical** space (the area that reaches from your soil up to the treetops) to work with.

There are several **zones** in these spaces that **wildlife** can live in.

Different **species** of **wildlife** can live in each of these zones. A little space can provide homes for a lot of **wildlife!**



Home Of The Wild

Follow these easy steps and in no time
YOU will be providing a home for **wildlife!**

1. Make a sketch of the space where you are going to make your **wildlife habitat** and remember that YOU are part of the habitat. In your sketch be sure to include all the different types of plants and trees, buildings and sidewalks or paths.



2. Research what types of **wildlife** and **plants** are **native** to your community.

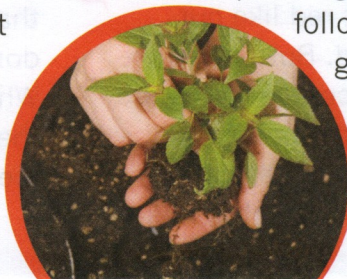
Decide which species you would like to provide a habitat for. **Native** species are best because they can survive in your soil type and climate.



3. Add the trees, shrubs and plants you need in your **habitat** to your sketch. Make sure you have a good variety. Some plants will be a good food source, others will be shelter and cover for **wildlife**. Evergreens are a great species for year round shelter. Trees and shrubs that have fruit or berries are a good food source.



4. Start planting! Begin with the trees and follow with shrubs, plants and ground cover. Remember your research – add **native** plants to attract **native wildlife!**



Why "Butter"?



Your backyard or the nature garden at school aren't the only places butterflies live. They live on every continent on Earth except for Antarctica.

Why do you think they don't live in Antarctica?

Butterflies live where it is cold, where it is hot, where it rains a lot and where it is very dry. Scientists estimate that there are 15,000 species of butterflies around the world. Most butterflies live in one small area – like your backyard – for their entire lives! The only butterflies that do a lot of traveling are Monarchs that migrate to Mexico or the California coast. Butterflies are pollinators so they are needed all over the world. About 40 percent of the food we eat comes from or depends on flowering plants.

These plants can't survive without pollinators like butterflies, bees and beetles!

In some ways butterflies are like a lot of other insects and animals. For instance, they have a brain and a heart.

Their brain is called a cerebral ganglion and it is in the thorax (close to the throat). A butterfly's heart is long and skinny and pumps hemolymph from the back of the insect to the front to bathe all its internal organs.

Hemolymph is not red like our blood, it is a clear liquid. Butterflies are also very different in a couple of ways. Butterflies don't go to the bathroom and they never sleep. They eat nectar from flowers and drink water but it is

used to keep their water balance level and for energy so that they can flutter around. Butterflies don't sleep because they don't have eyelids.

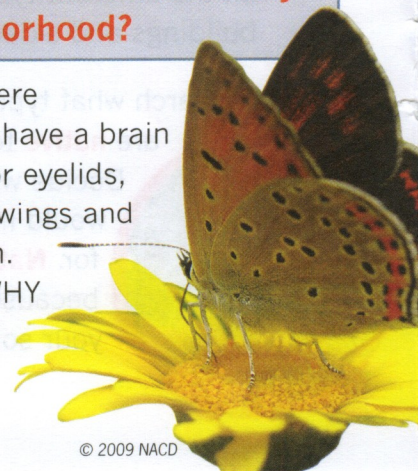
What do you think a butterfly does if something gets in its eye since it can't blink?



The wings of a butterfly are very beautiful and very fragile. They are covered with tiny hairs called scales. The scales form the bright colors and patterns on the wings. Sometimes the colors are in an ultraviolet pattern that we can't see but other butterflies can. They are used as a secret signal to other butterflies to attract mates. The patterns on butterfly wings can also help a butterfly blend in with its surroundings so that hungry birds and other animals will have a harder time finding them.

What colors have you seen on butterfly wings in your neighborhood?

Well, we now know where butterflies live, that they have a brain and heart but no blood or eyelids, that they have gorgeous wings and don't go to the bathroom. What we don't know is WHY they are called "butter" flies....got any ideas?



How Do You Say Butterfly?


If you could make up your own word for "butterfly" what would it be? _____

Why did you choose that word? Words in any language always have meaning. Look at the list of words in the box "butterfly in any language". **Try to match the word for "butterfly" with the country in the "If you live in: and speak: you would say" list.** One is done for you as an example.

If you live in: and speak: you would say:

Anywhere • Sign Language _____
 China • Chinese _____
 France • French _____
 Germany • German _____
 Israel • Hebrew _____
 Italy • Italian _____
 Japan • Japanese _____
 Russia • Russian babochka _____
 Sweden • Swedish _____
 United States • Cherokee _____

"butterfly" in any language

fjaril		babochka
kamama		schmetterling
parpar		hu die
papillon		choo
farfalla		
interlock your thumbs and flutter your fingers like wings		

- Some butterflies—such as the Monarch—eat poisonous plants while they are in the caterpillar stage and so are poisonous themselves as adults. Birds have learned NOT to eat a Monarch butterfly when they have the munchies!



How do you think birds learned not to eat monarchs?



- Just like with people and other animals like dogs, butterflies come in all different sizes. The world's largest butterfly—Queen Victoria Birdwing—weighs

up to 3 grams. The smallest butterfly—Pygmy Blue—weighs up to .004 grams!

What kind of butterflies live in your community and how much do you think they weigh?

- Caterpillars change into a chrysalis when they start producing hormones just like our bodies change when we produce hormones.

Can you think of anything else you might have in common with butterflies?



The female lays tiny round or oval shaped eggs on a plant. Each butterfly species will only lay their eggs on a few certain types of plants that their caterpillars will eat.



The caterpillar comes out of the egg hungry and begins to eat! Some caterpillars produce a sweet sugary substance that attracts ants. The ants protect the caterpillar!



Caterpillars eat and defecate 24 hours a day/7 days a week! Some caterpillars eat poisonous plants and become poisonous butterflies.

Some caterpillars are striped, some have colorful patterns on their skin and some have hairs like spines. All caterpillars shed their skin at least 4 times to keep their bodies covered while they are growing. Some butterflies remain in the caterpillar stage a few days and others take longer. A scientist at the University of California found a yucca moth that can remain a caterpillar for 30 years!

The Life Cycle Of A Butterfly

Male and female butterflies use colors and hidden ultra-violet patterns on their wings as well as chemical pheromones and posturing to attract each other and mate.



When the juvenile hormone in a caterpillars body drops to a low level the caterpillar quits growing and shedding its skin and becomes a chrysalis (pupa). A chrysalis is usually brown or green and inside it the caterpillar's tissues are broken down and the adult butterfly is formed.

Adult butterflies have a short life span. The average butterfly only lives as an adult for about 2 weeks. There is a butterfly in Costa Rica that only lives for 2 days! No adult butterfly lives for more than one year but during their short life span they carry out a very important function.... pollination!

When the metamorphosis from caterpillar to butterfly is complete the adult butterfly emerges from the chrysalis. Butterflies can be many different beautiful colors and can also vary greatly in size from .004 grams to 3 grams.

Ask Maxine

Q: How long do butterflies live?

A: Butterflies spend most of their lives as a caterpillar or pupa. The butterflies you see flitting around with beautiful wings are in the adult stage. Most adult butterflies live for about 2 weeks. A few butterflies, like the Monarch that migrates to Mexico or California, live as adults for about 6 months.

Maxine worked for NACD for 47 years. That's why we always ask Maxine.



If you live anywhere and use Sign Language, you would interlock your thumbs and flutter your fingers like wings.
If you live in China and speak Chinese, you would say hu die.
If you live in France and speak French, you would say papillon.
If you live in Germany and speak German, you would say schmetterling.
If you live in Israel and speak Hebrew, you would say parpar.
If you live in Italy and speak Italian, you would say farfalla.
If you live in Japan and speak Japanese, you would say choo.
If you live in Russia and speak Russian, you would say babochka.
If you live in Sweden and speak Swedish, you would say fjäril.
If you live in the United States and speak Cherokee, you would say kammama.

Answer Key
How do YOU say butterfly?



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